

# Long Life, Catalytic Advanced Green Monopropellant Thrusters, Phase I

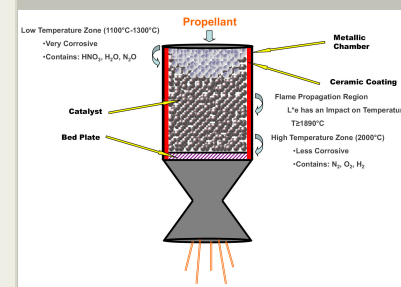
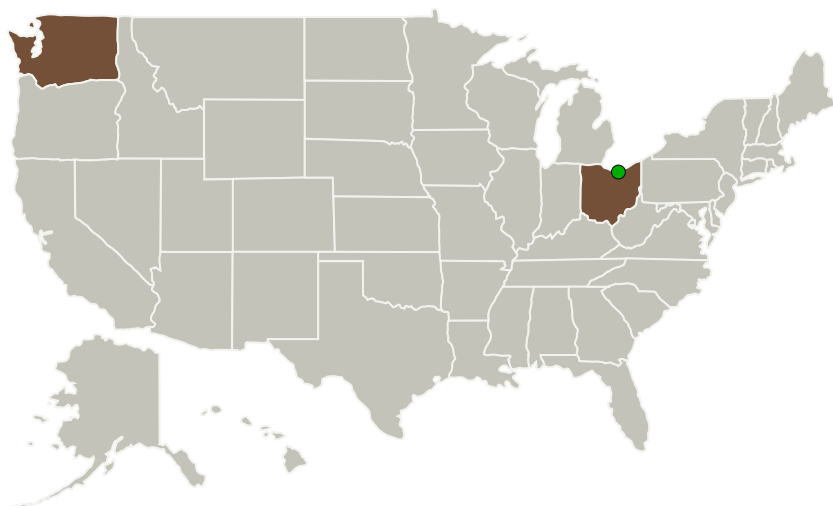
Completed Technology Project (2017 - 2017)



## Project Introduction

Sienna Technologies, Inc, proposes to develop a robust, long life, catalytically ignited thruster that can perform multiple cold starts at low preheat temperatures ( $<425^{\circ}\text{C}$ ) using high performance green AF-M315E monopropellant that can provide a range of mission specific thrust levels for NASA SMD's sample return missions. In Phase I we will improve upon Sienna's industry leading SSC-111 catalyst and demonstrate its multiple cold start capability at low preheat temperatures (well below state-of-the-art  $425^{\circ}\text{C}$ ) in sea-level laboratory tests.

## Primary U.S. Work Locations and Key Partners



Long Life, Catalytic Advanced Green Monopropellant Thrusters, Phase I Briefing Chart Image

## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

Organizations Performing Work	Role	Type	Location
Sienna Technologies, Inc.	Lead Organization	Industry	Woodinville, Washington
● Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

### Primary U.S. Work Locations

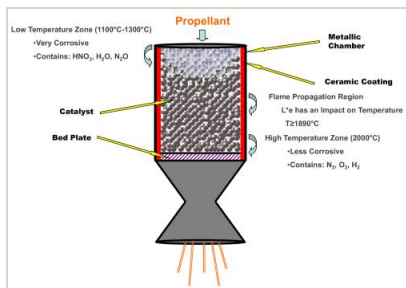
Ohio	Washington
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## Images



### Briefing Chart Image

Long Life, Catalytic Advanced Green Monopropellant Thrusters, Phase I Briefing Chart Image (<https://techport.nasa.gov/image/132345>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Sienna Technologies, Inc.

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

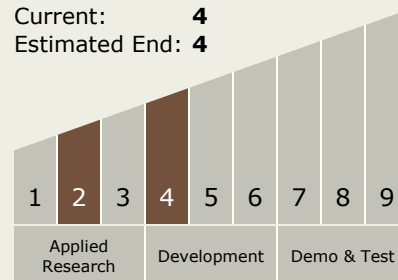
Carlos Torrez

### Principal Investigator:

Ender Savrun

## Technology Maturity (TRL)

Start: 2  
Current: 4  
Estimated End: 4



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## Technology Areas

### Primary:

- TX01 Propulsion Systems
  - └ TX01.1 Chemical Space Propulsion
    - └ TX01.1.2 Earth Storable

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System